



1.

SEQUENCE LISTING

RECEIVED
AUG 03 2001
TECH CENTER 1600/2900

<110> Skolnick, Jeffrey
Fetrow, Jacquelyn S.

<120> METHODS AND SYSTEM FOR PREDICTING
PROTEIN FUNCTION

<130> 10886-047001

<140> 09/322,067

<141> 1999-05-27

<150> 60/099,300

<151> 1998-08-25

<150> 60/120,311

<151> 1999-02-16

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 130

<212> PRT

<213> Haemophilus influenzae

<400> 1

Met	Met	Tyr	Ser	Lys	Leu	Leu	Thr	Leu	Thr	Thr	Leu	Leu	Leu	Pro	Thr
1				5				10						15	
Ala	Leu	Ala	Leu	Pro	Ser	Leu	Val	Glu	Arg	Ala	Cys	Asp	Tyr	Thr	Cys
			20					25					30		
Gly	Ser	Asn	Cys	Tyr	Ser	Ser	Ser	Asp	Val	Ser	Thr	Ala	Gln	Ala	Ala
		35					40					45			
Gly	Tyr	Gln	Leu	His	Glu	Asp	Gly	Glu	Thr	Val	Gly	Ser	Asn	Ser	Tyr
	50					55					60				
Pro	His	Lys	Tyr	Asn	Asn	Tyr	Glu	Gly	Phe	Asp	Phe	Ser	Val	Ser	Ser
65					70				75					80	
Pro	Tyr	Tyr	Glu	Trp	Pro	Ile	Leu	Ser	Ser	Gly	Asp	Val	Tyr	Ser	Gly
				85				90					95		
Gly	Ser	Pro	Gly	Ala	Asp	Arg	Val	Val	Phe	Asn	Glu	Asn	Asn	Gln	Leu
		100					105						110		
Ala	Gly	Val	Ile	Thr	His	Thr	Gly	Ala	Ser	Gly	Asn	Asn	Phe	Val	Glu
		115					120					125			
Cys	Thr														
	130														

<210> 2

<211> 107

<212> PRT

<213> Haemophilus influenzae

<400> 2

Gln	Ser	Ala	Thr	Thr	Cys	Gly	Ser	Thr	Asn	Tyr	Ser	Ala	Ser	Gln	Val
1				5				10						15	

Arg Ala Ala Ala Asn Ala Ala Cys Gln Tyr Tyr Gln Asn Asp Asp Ser
 20 25 30
 Ala Gly Ser Thr Thr Tyr Pro His Thr Tyr Asn Asn Tyr Glu Gly Phe
 35 40 45
 Asp Phe Pro Val Asp Gly Pro Tyr Gln Glu Phe Pro Ile Lys Ser Gly
 50 55 60
 Gly Val Tyr Thr Gly Gly Ser Pro Gly Ala Asp Arg Val Val Ile Asn
 65 70 75 80
 Thr Ile Asn Cys Glu Tyr Ala Gly Ala Ile Thr His Thr Gly Ala Ser
 85 90 95
 Gly Asn Asn Phe Val Gly Cys Ser Gly Thr Asn
 100 105

<210> 3
 <211> 105
 <212> PRT
 <213> Haemophilus influenzae

<400> 3
 Glu Ser Cys Glu Tyr Thr Cys Gly Ser Thr Cys Tyr Trp Ser Ser Asp
 1 5 10 15
 Val Ser Ala Ala Lys Ala Lys Gly Tyr Ser Leu Tyr Glu Ser Gly Asp
 20 25 30
 Thr Ile Asp Asp Tyr Pro His Gly Tyr His Asp Tyr Glu Gly Phe Asp
 35 40 45
 Phe Pro Val Ser Gly Thr Tyr Tyr Glu Tyr Pro Ile Met Ser Asp Tyr
 50 55 60
 Asp Val Tyr Thr Gly Gly Ser Pro Gly Ala Asp Arg Val Ile Phe Asn
 65 70 75 80
 Gly Asp Asp Glu Leu Ala Gly Val Ile Thr His Thr Gly Ala Ser Gly
 85 90 95
 Asp Asp Phe Val Ala Cys Ser Ser Ser
 100 105

<210> 4
 <211> 113
 <212> PRT
 <213> Haemophilus influenzae

<400> 4
 Cys Asn Ile Pro Glu Ser Thr Asn Cys Gly Gly Asn Val Tyr Ser Asn
 1 5 10 15
 Asp Asp Ile Asn Thr Ala Ile Gln Gly Ala Leu Asp Asp Val Ala Arg
 20 25 30
 Pro Asp Gly Asp Asn Tyr Pro His Gln Tyr Tyr Asp Glu Ala Ser Glu
 35 40 45
 Asp Ile Thr Leu Cys Cys Gly Pro Gly Ser Trp Ser Glu Phe Pro Leu
 50 55 60
 Val Tyr Asn Gly Pro Tyr Tyr Ser Ser Arg Asp Asn Tyr Val Ser Pro
 65 70 75 80
 Gly Pro Asp Arg Val Ile Tyr Gln Thr Asn Thr Gly Glu Phe Cys Ala
 85 90 95
 Thr Val Thr His Thr Gly Ala Ala Ser Tyr Asp Gly Phe Thr Gln Cys
 100 105 110
 Ser

<210> 5
 <211> 104
 <212> PRT
 <213> Haemophilus influenzae

<400> 5
 Asp Cys Asp Tyr Thr Cys Gly Ser His Cys Tyr Ser Ala Ser Ala Val
 1 5 10 15
 Ser Asp Ala Gln Ser Ala Gly Tyr Gln Leu Glu Ser Ala Gly Gln Ser
 20 25 30
 Val Gly Arg Ser Arg Tyr Pro His Gln Tyr Arg Asn Tyr Glu Gly Phe
 35 40 45
 Asn Phe Pro Val Ser Gly Asn Tyr Tyr Glu Trp Pro Ile Leu Ser Ser
 50 55 60
 Gly Ser Thr Tyr Asn Gly Gly Gly Pro Gly Ala Asp Arg Val Val Phe
 65 70 75 80
 Asn Asp Asn Asp Glu Leu Ala Gly Leu Ile Thr His Thr Gly Ala Ser
 85 90 95
 Gly Asp Gly Phe Val Ala Cys Tyr
 100

<210> 6
 <211> 102
 <212> PRT
 <213> Haemophilus influenzae

<400> 6
 Ala Cys Ala Ala Thr Cys Gly Thr Val Cys Tyr Thr Ser Ser Ala Ile
 1 5 10 15
 Ser Ser Ala Gln Ala Ala Gly Tyr Asn Leu Tyr Ser Thr Asn Asp Asp
 20 25 30
 Val Ser Asn Tyr Pro His Glu Tyr His Asn Tyr Glu Gly Phe Asp Phe
 35 40 45
 Pro Val Ser Gly Thr Tyr Tyr Glu Phe Pro Ile Leu Lys Ser Gly Lys
 50 55 60
 Val Tyr Thr Gly Ser Ser Pro Gly Ala Asp Arg Val Ile Phe Asn Asp
 65 70 75 80
 Asp Asp Glu Leu Ala Gly Val Ile Thr His Thr Gly Ala Ser Gly Asn
 85 90 95
 Asn Phe Val Ala Cys Thr
 100

<210> 7
 <211> 102
 <212> PRT
 <213> Haemophilus influenzae

<400> 7
 Ala Cys Ala Ala Thr Cys Gly Ser Val Cys Tyr Thr Ser Ser Ala Ile
 1 5 10 15
 Ser Ala Ala Gln Glu Ala Gly Tyr Asp Leu Tyr Ser Ala Asn Asp Asp
 20 25 30
 Val Ser Asn Tyr Pro His Glu Tyr Arg Asn Tyr Glu Gly Phe Asp Phe
 35 40 45
 Pro Val Ser Gly Thr Tyr Tyr Glu Phe Pro Ile Leu Arg Ser Gly Ala
 50 55 60
 Val Tyr Ser Gly Asn Ser Pro Gly Ala Asp Arg Val Val Phe Asn Gly

```

65                               70                               75                               80
Asn Asp Gln Leu Ala Gly Val Ile Thr His Thr Gly Ala Ser Gly Asn
                               85                               90                               95
Asn Phe Val Ala Cys Asp
                               100

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<210> 8
<211> 104
<212> PRT
<213> Haemophilus influenzae
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<400> 8
Ala Cys Met Tyr Ile Cys Gly Ser Val Cys Tyr Ser Ser Ser Ala Ile
 1           5           10           15
Ser Ala Ala Leu Asn Lys Gly Tyr Ser Tyr Tyr Glu Asp Gly Ala Thr
      20           25           30
Ala Gly Ser Ser Ser Tyr Pro His Arg Tyr Asn Asn Tyr Glu Gly Phe
      35           40           45
Asp Phe Pro Thr Ala Lys Pro Trp Tyr Glu Phe Pro Ile Leu Ser Ser
      50           55           60
Gly Arg Val Tyr Thr Gly Gly Ser Pro Gly Ala Asp Arg Val Ile Phe
65           70           75           80
Asp Ser His Gly Asn Leu Asp Met Leu Ile Thr His Asn Gly Ala Ser
      85           90           95
Gly Asn Asn Phe Val Ala Cys Asn
      100

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<210> 9
<211> 105
<212> PRT
<213> Haemophilus influenzae
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<400> 9																
Gln	Gly	Gly	Val	Ser	Val	Asn	Cys	Gly	Gly	Thr	Tyr	Tyr	Ser	Ser	Thr	
1				5					10					15		
Gln	Val	Asn	Arg	Ala	Ile	Asn	Asn	Ala	Lys	Ser	Gly	Gln	Tyr	Ser	Ser	
			20					25					30			
Thr	Gly	Tyr	Pro	His	Thr	Tyr	Asn	Asn	Tyr	Glu	Gly	Phe	Asp	Phe	Ser	
		35					40					45				
Asp	Tyr	Cys	Asp	Gly	Pro	Tyr	Lys	Glu	Tyr	Pro	Leu	Lys	Thr	Ser	Ser	
	50					55					60					
Ser	Gly	Tyr	Thr	Gly	Gly	Ser	Pro	Gly	Ala	Asp	Arg	Val	Val	Tyr	Asp	
65					70					75					80	
Ser	Asn	Asp	Gly	Thr	Phe	Cys	Gly	Ala	Ile	Thr	His	Thr	Gly	Ala	Ser	
				85					90					95		
Gly	Asn	Asn	Phe	Val	Gln	Cys	Ser	Tyr								
			100					105								

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<210> 10
<211> 177
<212> PRT
<213> Haemophilus influenzae
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```
<400> 10
Met Val Ala Ile Lys Asn Leu Val Leu Val Ala Leu Thr Ala Val Thr
 1           5           10           15
Ala Leu Ala Val Pro Ser Pro Leu Glu Ala Arg Ala Val Thr Trp Thr
```

		20						25					30				
Cys	Leu	Asn	Asp	Gln	Lys	Asn	Pro	Lys	Thr	Asn	Lys	Tyr	Glu	Thr	Lys		
		35						40					45				
Arg	Leu	Leu	Tyr	Asn	Gln	Asn	Lys	Ala	Glu	Ser	Asn	Ser	His	His	Ala		
		50						55					60				
Pro	Leu	Ser	Asp	Gly	Lys	Thr	Gly	Ser	Ser	Tyr	Pro	His	Trp	Phe	Thr		
65						70				75					80		
Asn	Gly	Tyr	Asp	Gly	Asp	Gly	Lys	Leu	Pro	Lys	Gly	Arg	Thr	Pro	Ile		
				85					90					95			
Lys	Phe	Gly	Lys	Ser	Asp	Cys	Asp	Arg	Pro	Pro	Lys	His	Ser	Lys	Asp		
			100					105					110				
Gly	Asn	Gly	Lys	Thr	Asp	His	Tyr	Leu	Leu	Glu	Phe	Pro	Thr	Phe	Pro		
		115					120					125					
Asp	Gly	His	Asp	Tyr	Lys	Phe	Asp	Ser	Lys	Lys	Pro	Lys	Glu	Asn	Pro		
		130				135					140						
Gly	Pro	Ala	Arg	Val	Ile	Tyr	Thr	Tyr	Pro	Asn	Lys	Val	Phe	Cys	Gly		
145					150					155					160		
Ile	Ile	Ala	His	Thr	Lys	Glu	Asn	Gln	Gly	Glu	Leu	Lys	Leu	Cys	Ser		
				165					170					175			

His

<210> 11
 <211> 177
 <212> PRT
 <213> Haemophilus influenzae

Met	Val	Ala	Ile	Lys	Asn	Leu	Val	Leu	Val	Ala	Leu	Thr	Ala	Val	Thr		
1				5					10					15			
Ala	Leu	Ala	Met	Pro	Ser	Pro	Leu	Glu	Glu	Arg	Ala	Ala	Thr	Trp	Ile		
			20					25					30				
Cys	Met	Asn	Glu	Gln	Lys	Asn	Pro	Lys	Thr	Asn	Lys	Tyr	Glu	Asn	Lys		
		35					40					45					
Arg	Leu	Leu	Tyr	Asn	Gln	Asn	Asn	Ala	Glu	Ser	Asn	Ala	His	His	Ala		
		50				55					60						
Pro	Leu	Ser	Asp	Gly	Lys	Thr	Gly	Ser	Ser	Tyr	Pro	His	Trp	Phe	Thr		
65					70					75					80		
Asn	Gly	Tyr	Asp	Gly	Asp	Gly	Lys	Ile	Leu	Lys	Gly	Arg	Thr	Pro	Ile		
				85				90					95				
Lys	Trp	Gly	Asn	Ser	Asp	Cys	Asp	Arg	Pro	Pro	Lys	His	Ser	Lys	Asn		
			100					105					110				
Gly	Asp	Gly	Lys	Asn	Asp	His	Tyr	Leu	Leu	Glu	Phe	Pro	Thr	Phe	Pro		
		115				120						125					
Asp	Gly	His	Gln	Tyr	Asn	Phe	Asp	Ser	Lys	Lys	Pro	Lys	Glu	Asp	Pro		
		130				135					140						
Gly	Pro	Ala	Arg	Val	Ile	Tyr	Thr	Tyr	Pro	Asn	Lys	Val	Phe	Cys	Gly		
145					150					155					160		
Ile	Val	Ala	His	Thr	Arg	Glu	Asn	Gln	Gly	Asp	Leu	Lys	Leu	Cys	Ser		
				165					170					175			

His

<210> 12
 <211> 176
 <212> PRT
 <213> Haemophilus influenzae

<400> 12

Met	Val	Ala	Ile	Lys	Asn	Leu	Phe	Leu	Leu	Ala	Ala	Thr	Ala	Val	Ser
1				5					10					15	
Val	Leu	Ala	Ala	Pro	Ser	Pro	Leu	Asp	Ala	Arg	Ala	Thr	Trp	Thr	Cys
			20					25					30		
Ile	Asn	Gln	Gln	Leu	Asn	Pro	Lys	Thr	Asn	Lys	Trp	Glu	Asp	Lys	Arg
		35					40					45			
Leu	Leu	Tyr	Ser	Gln	Ala	Lys	Ala	Glu	Ser	Asn	Ser	His	His	Ala	Pro
	50					55					60				
Leu	Ser	Asp	Gly	Lys	Thr	Gly	Ser	Ser	Tyr	Pro	His	Trp	Phe	Thr	Asn
65					70					75					80
Gly	Tyr	Asp	Gly	Asn	Gly	Lys	Leu	Ile	Lys	Gly	Arg	Thr	Pro	Ile	Lys
				85					90					95	
Phe	Gly	Lys	Ala	Asp	Cys	Asp	Arg	Pro	Pro	Lys	His	Ser	Gln	Asn	Gly
			100					105					110		
Met	Gly	Lys	Asp	Asp	His	Tyr	Leu	Leu	Glu	Phe	Pro	Thr	Phe	Pro	Asp
	115						120					125			
Gly	His	Asp	Tyr	Lys	Phe	Asp	Ser	Lys	Lys	Pro	Lys	Glu	Asp	Pro	Gly
	130					135					140				
Pro	Ala	Arg	Val	Ile	Tyr	Thr	Tyr	Pro	Asn	Lys	Val	Phe	Cys	Gly	Ile
145					150					155					160
Val	Ala	His	Gln	Arg	Gly	Asn	Gln	Gly	Asp	Leu	Arg	Leu	Cys	Ser	His
				165					170					175	